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A Necropsy Report

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time by the attending veterinarian was 1 million O.U. of penicillin. The same dosage of penicillin was repeated on Nov. 22. The cow appeared much improved and her temperature returned to normal.

On Dec. 23, the cow was examined again and the following symptoms noted: discharge from the vulva, temperature of 100°F., poor general condition and little desire to eat. The owner stated that she had not been bred and was having irregular heat periods. Treatment given was 1 million O.U. of penicillin and diethylstilbestrol (dosage not stated). The same treatment was repeated on Dec. 24 and Dec. 26. The cow failed to show any improvement.

Treatment was initiated immediately when the cow entered the clinic. On

Dec. 31 she was restrained and a blood sample taken. Hemoglobin content was found to be 46 percent of normal or 5.53 Gm. The erythrocyte count was 6,050,000; the leucocyte count was 6,080 which was broken down as follows: juvenile or younger neutrophils 800, segmented or older neutrophils 2,800, monocytes 100 and lymphocytes 2,500. On Jan. 3 the patient was given 24 Gm. of equal parts powdered gentian, ginger and nux vomica in capsule form per os, and 30 cc. of 1 percent cobalt chloride solution in a capsule per os. On Jan. 4 expiratory dyspnea was noted. Treatment given was the same as for the previous day.

On Jan. 5 it was found that the animal had died during the previous night. Autopsy revealed the following lesions: left kidney greatly enlarged, both kidneys contained numerous large abscesses filled with thin purulo-hemorrhagic exudate, uremia as evidenced by ulcerations in the gastrointestinal tract, fatty degeneration of the liver, diffuse ecchymotic hemorrhages of the liver, subepicardial and subendocardial hemorrhages and marked interstitial emphysema of the lungs.

A diagnosis of suppurative nephritis was made on the basis of these post mortem findings. Bacteriological smears taken from the abscesses of the kidney revealed *Corynebacterium pyogenes*.

The symptoms of suppurative nephritis are similar to chronic vaginitis and metritis, and traumatic gastritis. An examination of the urinary system is important in making a differential diagnosis in these conditions.

Verle Foote, '51

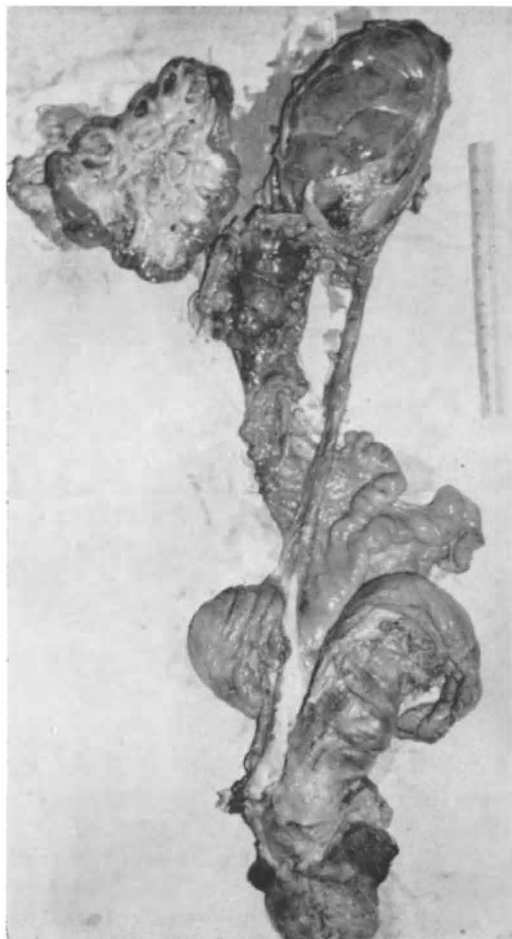


Fig. 2. Pyelonephritis.

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A Necropsy Report. On Jan. 31, 1950, a dog was presented for necropsy. The cadaver was that of a brown Doberman Pinscher bitch, 15 months old, and weighted about 50 lbs. According to the history, the owner noticed the bitch in heat and because he had no place to keep her confined during this period, he desired to have her spayed. Although the clinician informed him of the risk incurred when a bitch

is spayed at such a time, he nevertheless insisted upon the operation. Further history revealed that the dog had been in the clinic previously for broken forelegs. However, union of the bones was obtained without incident and the dog discharged.

A classical oophorohysterectomy was performed the morning of Jan. 28, 1950. Perhaps it should be mentioned that all ovarian and uterine vessels were securely ligated as is usual in such cases. That afternoon the dog died.

External Examination

The subject was in a good state of nutrition. The vulva was swollen, but this was considered a physiological swelling incident with estrus. The visible mucous membranes were anemic.

Internal Examination

The abdominal cavity was filled with blood which completely bathed the viscera. The blood was poorly clotted. The source of this extravasation will be explained later.

The stomach was empty—otherwise normal. The wall of the small intestine was slightly thickened. This was noticeable by palpation of the intestine. A slight chronic catarrhal enteritis was noted when the intestinal mucosa was exposed. Several tapeworms (*Dipylidium caninum*) were found which could account for the catarrhal condition. A localized hyperemic area of the serosa of the colon was ascribed to trauma by the ovariectomy hook.

The liver had undergone considerable post mortem change as evidenced by imbibition of bile around the gallbladder. Some antemortem changes may have been thus obscured. However, hepatic anemia was evident.

A localized peritonitis was present around the area of surgical incision.

The respiratory system was normal with the exception of some hypostatic congestion of the lungs.

The myocardium lacked tone, but this may have been due to the freezing to which the cadaver had been subjected, or to other post mortem changes. Subendocardial hemorrhages, ecchymotic in

nature, were noticed and it was theorized that they were due to anoxia, coincident with hemorrhagic anemia.

As noted above, the abdominal cavity was full of blood. This extensive and apparently fatal hemorrhage was traced to the right posterior uterine artery on the uterine stump. Although this artery was apparently ligated sufficiently, a small branch of the artery may have escaped ligation. At any rate, the hemorrhage was traced to this point. Ordinarily, blood from such a small vessel, or blood oozing from a larger vessel, would clot readily. The fact that this dog's blood was poorly clotted questions the efficiency of the blood clotting mechanism.

The spleen was anemic but not contracted as might have been expected considering the severe hemorrhagic anemia.

Necrotic foci were noted on the renal surface when the capsule was withdrawn. These foci, about 2 mm. in diameter, had apparently been present for some time. The kidneys were soft in consistency—perhaps this was a post mortem change. The bladder wall contained a contusion about 1 cm. in diameter. No explanation could be found for this lesion.

The uterine stump was quite hemorrhagic. The description of the posterior uterine artery has already been given. The physiological swelling of the vulva has likewise been noted.

When the left tympanic bulla was removed, an otitis media was visible.

Pathology in Order of Significance

1. Extensive internal hemorrhage from the right posterior uterine artery
2. Nephritis
3. Chronic catarrhal enteritis
4. Subendocardial hemorrhages
5. Hepatic and splenic anemia
6. Otitis media

Diagnosis and Conclusions

The immediate cause of death was anemia and anoxia due to severe internal hemorrhage from the right posterior uterine artery. Contributing factors may have been the chronic nephritis which lowered the blood protein thereby inter-

fering with the blood clotting mechanism. Or the liver may have been previously damaged to the extent that it was not forming and storing other clotting factors, viz., prothrombin, and vitamin K.

The enteritis and the otitis media, although definitely pathological, were minor lesions compared to those mentioned above.

Bacteriological cultures from the liver and kidney proved negative.

This case well illustrates the importance of the following:

1. Not spaying bitches in heat. If the owner insists, be sure he realizes the possible consequences.
2. Securely placed ligatures
3. Thorough physical examination of the patient before surgery. (Unfortunately, this is neither practical nor economical in every case.)

Donald A. Fuller, '50

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Chloroform Anesthesia in the Castration of Boars.

The office of the ambulatory clinicians of the veterinary clinic at Iowa State College received a call on Jan. 21, 1950, from the college swine herdsman concerning the castration of five mature herd boars. The following equipment was prepared:

1. Large, flat, stainless steel pan
2. Bard-Parker handle and hooked blades
3. Emasculator
4. Hard twist manila rope, $\frac{1}{2}$ in. x 12 ft.
5. Large turkish towel
6. Chloroform, three $\frac{1}{4}$ lb. bottles

Each boar was crowded with a panel, and a running noose slipped over his upper jaw. The rope was then snubbed around a stout post and the boar pulled up until he had about 18 in. of play in the rope. The towel was wrapped (single layer) about his snout and over his nostrils, and then secured with a single wrap of baling wire.

Approximately 1 fl. oz. (1/16 lb.) of chloroform was applied to the towel over the nostrils, and the anesthetist stepped back. Each boar very rapidly entered the delirious stage and threw his head back

and forth in a pendulous motion at the rope's end. This action was violent, dangerous, observed in all five boars, but was of short duration. As soon as this violence ended the anesthetist again started to apply chloroform to the towel over the nostrils, but slowly, while observing the depth of anesthesia. In general, another fl. oz. (1/16 lb.) was so used, making a total of approximately 2 fl. oz. (1/8 lb.) for each boar.

As each boar lost consciousness, he sagged back against the rope and was finally pushed to his left side. The rope was quickly removed from the snubbing post and hitched to the right (upper) rear leg at the level of the hock. The leg was drawn up and forward out of the field of operation, exposing the scrotum.

The scrotum was brushed as clean as possible, but no liquid antiseptic was applied. The surgeon stood with his left foot and leg against the boar's rump and haunch, his right foot and leg back out of possible danger. The primary incisions were made parallel to the median raphe of the scrotum, and about $\frac{1}{2}$ to 1 in. from it. The incision was free, through the skin and tunica dartos, and extended far enough forward to insure good drainage, but was not through the tunica vaginalis. The scrotal fat and fascia was broken down manually, freeing the testicle enclosed in the tunica vaginalis, except for the anterior and posterior attachments (spermatic cord and gubernaculum testis). The gubernaculum testis was ruptured with manual traction, and the spermatic cord withdrawn as far as possible and freed of all clinging tissue. The emasculator was set about the cord as close to the body wall as practical, and the testicle, with its tunica vaginalis, removed. The emasculator was left in place for a few seconds, then removed and the stump observed for excessive hemorrhage. The scrotum was then examined for any blind tissue pockets, which were incised. The primary incisions were extended forward, until they nearly met on the abdominal midline, to insure adequate drainage.

The baling wire and towel were re-